HYDRAULIC FAN DRIVE SYSTEM EMPLOYING BINARY CONTROL STRATEGY

Abstract of Disclosure

A hydraulically controlled fan drive system for controlling the cooling of an engine and having a method of engagement includes a housing assembly containing a hydraulic fluid and an engaging circuit. The engaging circuit includes a pitot tube coupled within the housing assembly that receives at least a portion of the hydraulic fluid as the housing assembly rotates to drive a clutch pack (and coupled fan) via static pressure. A fluid controller having binary control adjusts the static pressure within the pitot tube at a given rotational speed, thereby controlling the engagement of the clutch pack to a fully engaged drive (utilizing friction type engagement), a fully disengaged drive, and at least two partially engaged clutch positions (i.e. partially engaged utilizing a wet viscous type clutch engagement). To control static pressure release, the fluid controller may utilize a dual spool system valving arrangement or a parallel fixed orifice binary control.